Antonio Gill

Generic Smart Meter Investigation
E-00000C-11-0328

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From: David
Sent: Friday
To: Antoni
Subject: Smart Meter Docket #E-00000C-11-0328
Attachments: APSOptOut_SuccessFormula.pdf

Docket Control
Arizona Corporation Commission
1200 W Washington Street
Phoenix, AZ 85007

October 28, 2011

Smart Meter Docket #E-00000C-11-0328

Dear Commissioners:

Various members of Snowflake's community of Electrically Hypersensitive (EHS) individuals have previously expressed their views to the Arizona Corporation Commission and APS on the subject of Smart Meters and the requirements for an opt-out program that will address the needs of our community and similar communities in APS's service area. Attached please find a summary of recommendations regarding a positive and feasible solution to the opt-out issue, assembled by three leading community members whose ideas are representative of the community as a whole.

Thank you for your consideration of this matter.

Sincerely,

David Smith
Dawn Grenier
Steen Hviid, MS Engineer
Safer Utilities Network
PO Box 1523
Snowflake, AZ 85937

Arizona Corporation Commission
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APS OPT-OUT PROGRAM: A FORMULA FOR SUCCESS

Introduction

In recent months some APS customers have expressed concern regarding health issues related to the utility's AMI program. The vast majority of the customers expressing such concerns are those who suffer from a rare illness, electrical hypersensitivity (EHS). Any opt-out program APS institutes, even if it is only for the purpose of insuring general customer satisfaction and is therefore not strictly medical in nature, must take into account the special needs of these disabled customers.

The total number of APS customers who suffer from EHS is a small fraction of the utility's overall customer base; it is estimated that no more than four or five hundred people with EHS live in the entire state. APS's EHS customers can be divided into two groups: urban/suburban dwellers and those living in remote rural sanctuaries. Although both groups suffer terribly from their disability, the rural EHS customers are by far the most impaired, the sickest of the sick. They have been driven out of the cities and suburbs by the high ambient levels of EMF's from power lines, cell towers, residents' wi-fi, and the like and can survive only in areas of very low population density. Snowflake's EHS sanctuary is typical of such refuges, situated miles from town and with homes that have been specially built to reduce EMF exposures.

Both groups of customers need to avoid any added burden of EMF exposure and actively seek to do so on a constant basis, working within the constraints of their individual life circumstances. APS's plans for AMI imposes a direct and unreasonable health burden on this disabled, vulnerable subgroup of their customers and therefore any opt-out program should be designed to provide reasonable accommodation for this subpopulation to the greatest degree possible.

Predictability vs. Uncertainty

We understand and appreciate that in situations where the health and safety of its customers is an issue, the primary goal of any corporation is to find solutions which

maximize predictability and minimize uncertainty. In the case of APS's opt-out program, predictability of outcome will be maximized by utilizing a meter technology that has a proven track record of safety with both urban/suburban EHS customers and the more medically fragile EHS residents of rural sanctuaries. Both groups have used APS's existing electromechanical analog meters for years and found such technology to be safe. Fortunately, this established history provides the utility with a ready-made answer to the pressing question, "What is the safest route for this program?" By making such meters the centerpiece and core of its opt-out, APS embraces best practices in dealing with a complex and little understood illness and will be secure in the knowledge that it has exercised due diligence in protecting the health and safety of some of its most vulnerable disabled customers.

Features of an Effective Opt-out Program

Customers who can produce a letter from a medical professional certifying their condition would be allowed to have the above-mentioned electromechanical analog meters. If an APS customer with EHS moves, they will be able to get the same type of meter installed at their new residence.

If an EHS customer voluntarily chooses to try any type of solid state meter, either by allowing the replacement of the analog meter on their current dwelling or by accepting the solid state meter on a new residence they move into, they will retain the right to have the above-mentioned analog type meter, with the proviso that they agree to pay a reasonable fee for meter installation or re-installation.

There must be an adequate stock of meters to meet the above-mentioned situations and to replace meters that wear out. By warehousing a small fraction of the thousands of electromechanical meters it will remove in the coming months, APS will be able to supply the needs of the opt-out program for the foreseeable future.

There are secondary, optional features that can be added to further strengthen the effectiveness of the core program. We list these features below for possible inclusion.

1. Allow neighbors living within close proximity (100 feet or less) to an EHS customer to voluntarily participate in the opt-out, with the proviso that the utility has no obligation whatsoever to inform such neighbors of this option and that securing the consent and cooperation of any neighbors or landlords is the sole responsibility of the EHS customer.

2. Allow small businesses to opt-out if they have any EHS employee who requests it and who can provide a letter from a medical professional certifying their need.

The False Promise of Alternatives

The wide ranging national discussion of the Smart Meter issue has included a variety of proposed methods to give utility customers an alternative to wireless Smart Meters. Although some of these alternatives may meet the needs of utility customers who seek to opt-out on the basis of privacy or security concerns, they are seriously flawed and inadequate when it comes to protecting the health and safety of persons with EHS.

Adaptations to Wireless Meters

Some utilities have proposed opt-out programs whose centerpiece consists of universally installed solid state meters with an offer to either turn off or disable the transmitter/receiver function in the meters of those customers who request it. Such an opt-out program will not achieve the goal of a predictable outcome for APS.

Uncertainty will be ever-present in this scenario due to the presence of multiple factors that are resistant to consistent control. These factors include:

1. Lack of understanding by the meter manufacturers regarding the specific and special needs of people with EHS, especially those who are the most severely ill and medically fragile.

2. Human or computer error in on-site or remote programming of individual meters which may change safety parameters for EHS individuals.

3. Ever-changing technology as meters are continually upgraded.

4. The switched mode power supply found on all solid state meters creates electrical transients on the house wiring. Such transients can create significant health impacts on customers with EHS, especially the more severely ill.

PLC Systems

Some utilities use Smart Meters that communicate by sending pulses or signals on the existing electrical wires. These types of systems are referred to as Power Line Communication or Power Line Carrier (PLC).

As various citizens have sought alternatives to wireless meters, some have suggested that PLC might be an acceptable alternative. However, these citizens do not have EHS and do not understand that although PLC systems are not wireless, they will not provide a safe alternative for persons with EHS. **In fact, PLC technology is probably the most dangerous and devastating meter technology for people with EHS.**

By sending data signals over electrical wiring, PLC systems cause that wiring to radiate these frequency signals throughout the home, office or other building. The health effect of this EMF barrage on people with EHS is so severe that people are forced to abandon their homes. The prospect of losing one's home is sobering for a healthy person or family; for those with EHS, especially those in sanctuaries like Snowflake, it is a prospect too terrible to contemplate. And yet, we in Snowflake are receiving reports from our EHS brethren in other states that this nightmare has become a reality and that they have lost their homes to PLC technology.

Successful Integration of EHS Customers With Mainstream Customers

Urban/Suburban

As we have already suggested above, an optional feature of our proposed opt-out is to allow neighbors living in close proximity (100 ft. or less) to an EHS customer to voluntarily participate in the opt-out, keeping their existing analog meters or having one installed. This would be the most desirable method to assure the maximum possible benefit of the opt-out to EHS customers in the urban/suburban environment.

If this is not feasible, it would be acceptable to install solid state meters on adjacent households, provided that the transmitter/receiver is physically disabled/disconnected.

Rural EHS Sanctuaries

The situation is quite different for the EHS customers in such sanctuaries. Such areas are typically zoned for 5, 10 or 20+ acres. The greater distances between households makes the neighbors' use of solid state meters feasible even with their transmitters/receivers left on for two reasons:

1. The RF produced by the meter's transmitter will be far enough away as to be non-injurious to EHS customers.

2. Engineers have studied the issue of the electrical transients generated from switched mode power supplies. They know that distance attenuates these specific types of transients and that transformers on the EHS customers' property will act as a further barrier so that transients will not enter the wiring of the EHS household.

As a further protection, APS might choose to give mainstream neighbors cellular modem (GPRS) meters. California's Pacific Gas and Electric utility has used these meters for their rural customers, apparently because they are more cost effective for

rural areas than mesh network systems. Such cellular modem meters are also safer for EHS customers.

An important note. Any system of transmitting meters that requires central receivers ("Gatekeeper") to gather the signals from many households should not site these central receivers ("Gatekeeper") anywhere near an EHS household. Here in Snowflake the nearest cell tower to the EHS enclave is six miles distant.

Another option for the neighbors of EHS customers would be to supply them with meters that communicate via telephone land lines.

As for PLC systems, they should *never* be considered for use by mainstream customers in rural communities that host an EHS sanctuary. The reason is a characteristic of PLC systems that is unique to these systems. These systems have been specifically engineered to send data signals or pulses that can travel miles of power line without attenuation and to penetrate barriers such as residential transformers. If they were not so designed, their data transmission feature would be unreliable. So their electrical transients are very different from those generated by switched mode power supplies, which are merely an unintended by-product of those devices and which are greatly reduced by distance and transformer barriers as cited above.

PLC signals can travel for miles. Filtering such signals is costly and difficult with some systems and impossible with others. **Therefore, we urge APS in the strongest possible terms to refrain from using such systems in any rural community that hosts an EHS sanctuary, especially TWACS-type systems for which no filtering is possible.**

In Conclusion

We of the Snowflake EHS community feel very confident that the opt-out program we have proposed will meet the needs of both APS and its customers with EHS. We are committed to working constructively with utility staff to provide any additional information or solutions in the achievement of our mutual goals. If you wish to contact us, please email us at desmithbranford@gmail.com or write to Safer Utilities Network, PO Box 1523, Snowflake, AZ 85937.

Sincerely,

David Smith
Dawn Grenier
Steen Hviid, MS Engineer
Safer Utilities Network